

Planetary Forecaster
How are Temperature, Elevation, and Surface Air Pressure Related?
LS 5.4

Predict

Complete the following statements. Choose the terms that best fit your predictions.

1. Mount Everest is the tallest mountain in the world. At the top of the mountain you would expect to find **(lower, higher)** temperatures than at the bottom and **(low, high)** surface pressure.

2. The city of New Orleans, Louisiana actually has an elevation that is just below sea level. You would expect to find **(lower, higher)** temperatures than at the top of Mt. Everest and **(low, high)** surface pressure.

3. Places with high elevations will have **(low, high)** surface pressure.

4. Places with low elevations will have **(low, high)** surface pressure.

5. Places with higher elevations will have **(lower, higher)** surface temperatures.

6. Places with lower elevations will have **(lower, higher)** surface temperatures.

Procedure:

Read pages 145 and 146 and follow the directions for using the My World program to prepare January temperature, elevation, and surface pressure maps.

Analyze Your Data:

1. Recall the question that you answered after you investigated elevation and temperature: "Jimmy is hiking in the mountains. He is going to hike up to 2000 m over the next few days."
 - a. How will the temperature change as he hikes up the mountain?
 - b. How will the air pressure change as he hikes up the mountain?
2. What is the relationship between surface pressure and temperature?
3. If you created a graph comparing elevation to a surface pressure, what would that graph look like?

What is the Point? Read and write 2 sentences explaining the relationship between elevation, temperature, and surface pressure.